

**LOW NOISE TRANSMITTER ARCHITECTURE**  
**USING FOLDOVER SELECTIVE BAND FILTERING**  
**AND METHOD THEREOF**

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**ABSTRACT**

10       The present invention describes an apparatus capable of producing a radio  
frequency (RF) transmit (Tx) signal for a radiotelephone low enough in noise without  
requiring a post power amplifier (PA) cleanup filter.

15       A Tx signal generated by a modulator (710) is sent through a different filter by  
a first and second switches (714 and 728) based upon the frequency of the Tx signal,  
and each of the filters (720 and 724) are designed to reduce the noise floor of a certain  
predetermined region within a specific TX band. The noise floor of the Tx signal  
20       contributes to production of foldover noise due to intermodulation phenomenon  
caused by nonlinearity of the PA (732). However, because the portion of the noise  
floor within the Tx band is reduced by going through the appropriate bandpass filter  
for the Tx signal and because the foldover noise production is a nonlinear  
phenomenon, the resulting reduced noise floor contributes significantly less to the  
foldover noise generated by the PA (732)

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